What is claimed is:

1. An optical fiber having at a wavelength of 1,590 nm a chromatic dispersion, D, and a dispersion slope, S, that satisfy the formulae

$-200\ \text{ps/nm/km} \leqq D \leqq -50\ \text{ps/nm/km}$, and

$0.009\ \text{/nm} \leqq S/D$.

2. An optical fiber as defined by claim 1, wherein the chromatic dispersion D and the dispersion slope S further satisfy the formula

$S/D \leqq 0.015\ \text{/nm}$.

3. An optical fiber as defined by claim 1, wherein the chromatic dispersion D and the dispersion slope S satisfy the formulae

$-110\ \text{ps/nm/km} \leqq D \leqq -50\ \text{ps/nm/km}$, and

$0.009\ \text{/nm} \leqq S/D \leqq 0.011\ \text{/nm}$.

4. An optical fiber as defined by claim 1, the optical fiber having an effective area of at least 12 μm^2 at a wavelength of 1,590 nm.

5. An optical fiber as defined by claim 1, the optical fiber having a cutoff wavelength of at least 1.2 μm.

6. An optical fiber as defined by claim 1, the optical fiber having a transmission loss of at most 1.0 dB/km at a wavelength of 1,590 nm.

7. An optical fiber as defined by claim 1, the optical fiber having a total loss of at most 7 dB in a wavelength range of 1,565 to 1,610 nm.

8. An optical fiber as defined by claim 1, the optical fiber comprising:

(a) a central core region including the center of optical axis and having a first refractive index;

(b) a first cladding region encircling the central core region and having a second refractive index smaller than the first refractive index;

(c) a second cladding region encircling the first cladding region and having a third refractive index larger than the second refractive index; and

(d) a third cladding region encircling the second cladding region and having a fourth refractive index smaller than the third refractive index.

9. An optical fiber as defined by claim 8, wherein when the fourth refractive index is used as the reference:

(a) the central core region has a relative refractive-index difference, Δn_1, of at least 1.2%; and

(b) the first cladding region has a relative refractive-index difference, Δn_2, of at most -0.3%.

10. An optical fiber as defined by claim 8, wherein:

(a) the central core region has a diameter of 2a;

(b) the second cladding region has an outer diameter of 2c; and

(c) the ratio 2a/2c is at least 0.20.

11. An optical fiber as defined by claim 8, wherein when the outer diameter of the second cladding region varies by 2%, the ratio S/D varies by at most 15%.

12. An optical transmission line comprising:

(a) a positive-dispersion optical fiber having at a wavelength of 1,590 nm a chromatic dispersion of +6 to +10 ps/nm/km and a dispersion slope of +0.07 to +0.10 ps/nm^2/km; and

(b) an optical fiber that:

(b1) has at a wavelength of 1,590 nm a chromatic dispersion, D, and a dispersion slope, S, that satisfy the formulae

$-200 \text{ ps/nm/km} \leqq D \leqq -50 \text{ ps/nm/km}$, and

$0.009 \text{ /nm} \leqq S/D$; and

(b2) is spliced with the positive-dispersion optical fiber.

13. An optical transmission line as defined by claim 12, wherein the variation range (difference between the maximum value and the minimum value) of the average chromatic dispersion of the entire optical transmission line is at most 0.4 ps/nm/km in a wavelength range of 1,570 to 1,610 nm.

14. An optical communications system comprising:

(a) an optical transmitter for multiplexing a plurality of component signals having mutually different wavelengths to constitute a signal lightwave so that the signal lightwave can be outputted;

(b) an optical transmission line comprising:

(b1) a positive-dispersion optical fiber having at a wavelength of 1,590 nm a chromatic dispersion of +6 to +10 ps/nm/km and a dispersion slope of +0.07 to +0.10 $ps/nm^2/km$; and

(b2) an optical fiber that:

(b2a) has at a wavelength of 1,590 nm a chromatic dispersion, D, and a dispersion slope, S, that satisfy the formulae

$-200 \text{ ps/nm/km} \leqq D \leqq -50 \text{ ps/nm/km}$, and

$0.009 \text{ /nm} \leqq S/D$; and

(b2b) is spliced with the positive-dispersion optical fiber;

the optical transmission line transmitting the signal lightwave outputted from the optical transmitter; and

(c) an optical receiver for receiving the signal lightwave having traveled over the optical transmission line.